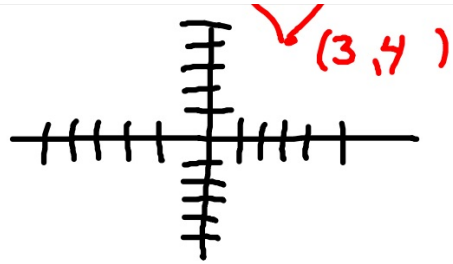


Graph: $2|x-3|+4$



The graph $f(x)=|x|$ is translated 5 units up, translated 2 units to the right and vertically compressed by a factor of $\frac{2}{3}$. $f(x)=\frac{2}{3}|x-2|+5$

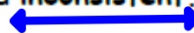
- ☺ A **system of equations** is a collection of equations in the same variables.
- ☺ The solution of a system of two linear equations in x and y is an ordered pair, (x, y) , that satisfies both equations.
- ☺ The solution (x, y) is the point of intersection for the graphs of the lines in the system.

• **Classifying Systems of Equations**

If a system of equations has at least one solution, it is called **consistent**.

- If a system has exactly one solution, it is called **independent**.
- If a system has infinitely many solutions, it is called **dependent**.

If a system does not have a solution, it is called **inconsistent**.



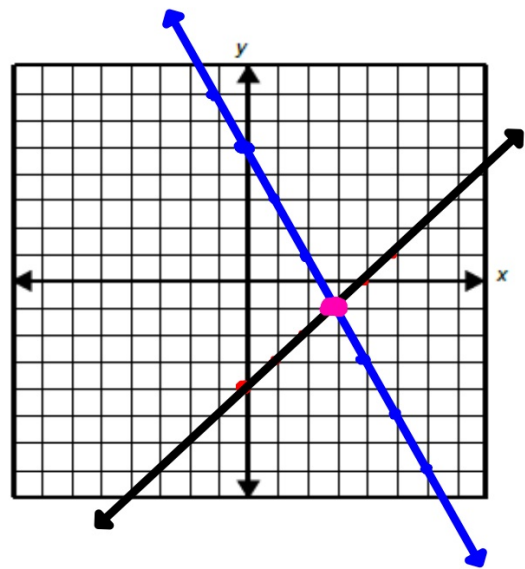
•

$$1) \begin{cases} y = x - 4 \\ y = -2x + 5 \end{cases} \quad m = \frac{1}{1} \quad b = -4$$

$$m = -\frac{2}{1} \quad b = 5$$

$(3, -1)$

CONSISTENT
/ INDEPENDENT



$$2) \begin{cases} x+3y=6 \\ x+3y=-3 \end{cases}$$

$$\begin{array}{r} x+3y=6 \\ -x \quad \quad \quad \\ \hline 3y = -x+6 \\ \frac{3y}{3} = \frac{-x+6}{3} \end{array}$$

$$y = -\frac{1}{3}x + 2$$

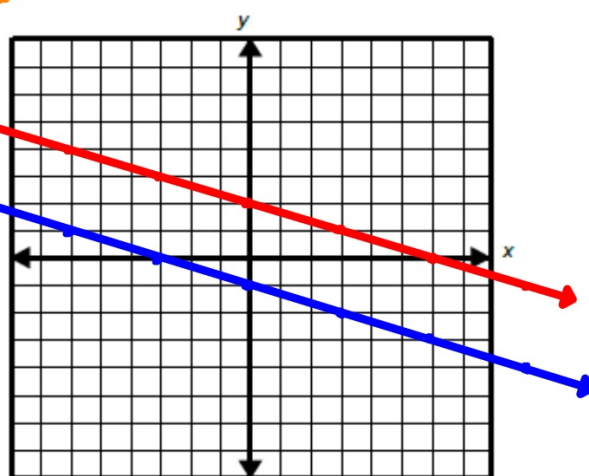
$$m = -\frac{1}{3} \quad b = 2$$

$$\begin{array}{r} x+3y=-3 \\ -x \quad \quad \quad \\ \hline 3y = -x-3 \\ \frac{3y}{3} = \frac{-x-3}{3} \end{array}$$

$$y = -\frac{1}{3}x - 1$$

$$m = -\frac{1}{3} \quad b = -1$$

(no solution)
INCONSISTENT



$$3) \begin{cases} x - 2y = 4 \\ 3x - 6y = 12 \end{cases}$$

$$\begin{array}{r} x - 2y = 4 \\ -x = -4 \\ \hline -2y = -x + 4 \\ = + 4 \\ = - 2 \end{array}$$

$$y = \frac{1}{2}x - 2$$

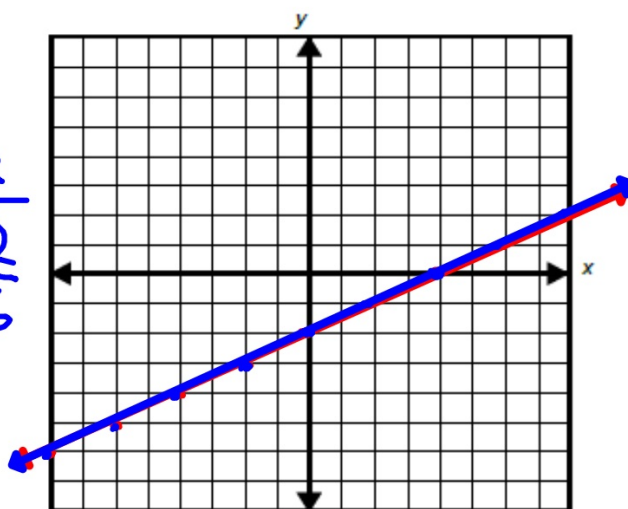
$$m = \frac{1}{2} \quad b = -2$$

$$\begin{array}{r} 3x - 6y = 12 \\ -3x = -12 \\ \hline -6y = -3x + 12 \\ = + 12 \\ = - 2 \end{array}$$

$$y = \frac{1}{2}x - 2$$

$$m = \frac{1}{2} \quad b = -2$$

CONSISTENT
DEPENDENT (infinite
Solutions)



Homework

3.1 - #1 - #8

graphing systems

